

EXHIBIT R-2, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N

PROJECT NUMBER: W2195

PROGRAM ELEMENT TITLE: Major T&E Investment

PROJECT TITLE: T&E Investment

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2195 Test and Evaluation Investment										
	*33,564	**21,232	42,621	42,461	43,955	52,741	53,506	55,696	Cont.	Cont.
TOTAL	33,564	21,232	42,621	42,461	43,955	52,741	53,506	55,696	Cont.	Cont.

* FY98 estimate reflects a \$3M Congressional Add for East Coast Communications effort.

** FY99 estimate reflects a \$4M Congressional Add for East Coast Communications effort and to be executed under project unit W2447.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility of Test and Evaluation (T&E) resources across the Services for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTECH), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point MUGU, CA and China Lake, CA; and the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 6: This program is funded under Research, Development, Test and Evaluation management support because it supports the operations and installations required for general research and development.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (\$9,071) NAVUNSEAWARCEN DET AUTECH. Completed the Advanced Noise Measurement project. Continued the Tracking Hydrophone Replacement project. Continued Instrumentation Component Replacement (ICR) efforts.
- (\$17,002) NAVAIRWARCENWPNDIV. Continued to modernized core instrumentation capability. Initiated upgrade of eight (11,12,13,14,15, 16,17,18) Kineto tracking mounts with video capability. Completed radar service life extension upgrades on first two of seven FPS-16 radars. Completed integration of Global Positioning System Range Application Joint Program Office (GPS RAJPO) equipment into range systems. Continued development of GPS support capability. Completed third and initiated fourth of five land range radar upgrades to controls, consoles and pedestals. Completed Electronic Combat Range (ECR) post test analysis and data products hardware and software upgrades. Completed upgrades to the land range control center integration and processing system. Continued to improve and secure communication, cable plant, and sea range data processing capabilities. Continued Air Surveillance radar replacement for San Nicolas Island. Completed final phase of analog microwave and range Internet removal to Vandenberg Air Force Base. Completed communication and control and radio communication improvements. Continued high rate telemetry data acquisition and processing upgrades at the Sea Range. Within this Program Element, completed environmental requirements for new and existing technologies.

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- (\$7,491) NAVAIRWARCENACDIV. Continued ICR efforts on existing flight test and ground test systems to maintain core capabilities. Continued upgrade of dynamic avionics measurement capabilities. Completed improvement to range command, control, tracking, and data acquisition and computation systems. Completed Modeling and Simulation for Test and Evaluation. Completed environmental requirements for new and existing technologies. Initiated engineering evaluation efforts for the East Coast Communications Network.

2. (U) FY 1999 PLAN:

- (\$6,911) NAVUNSEAWARCEN DET AUTEC. Continue the Tracking Hydrophone Replacement project.
- (\$6,614) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete upgrade of six Kineto tracking mounts with video trackers, infrared (IR) cameras and telescopes, and microwave transmission capability. Complete Sea Range data processing capabilities. Continue high rate telemetry data acquisition and processing upgrades at the Sea Range. Complete land range radar upgrades. Initiate the transfer and refurbishment of an ARSR-3 air surveillance radar to the Sea Range.
- (\$3,646) NAVAIRWARCENACDIV. Continue ICR efforts on existing flight test and ground test systems to maintain core capabilities. Complete upgrade of dynamic avionics measurement capabilities.
- (\$3,892) This is a Congressional mandated project for the East Coast Communications Network program. Continue identification of interconnectivity and interoperability requirements. Procure required hardware and software to support program efforts. Develop a Navy wide band connectivity to support Modeling and Simulation. Provide technical support to the Navy acquisition community using the East Coast Communications Network. Continue defining test capabilities and cost benefits using the East Coast Communications Network system.
- (\$169) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638.

3. (U) FY 2000 PLAN:

- (\$7,100) NAVUNSEAWARCEN DET AUTEC. Complete the Tracking Hydrophone Replacement project. Continue ICR efforts. Initiate Radar Systems Improvement Project. Initiate Off-Board Advanced Systems Stimulator Project. Initiate the Underwater Range Data Communication Project.
- (\$22,421) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete nine additional Kineto tracking mounts with video tracker, IR cameras and telescopes, and microwave transmission capability. Complete upgrade to all Weapons Division ranges data presentation and display systems. Continue high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Complete the refurbishment and installation of the ARSR-3 radar at the Sea Range. Initiate the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Initiate efforts to maintain the existing Integrated Target Control System until a new target control system is developed and fielded. Initiate modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Initiate modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Initiate a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers.

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- (\$13,100) NAVAIRWARCENACDIV. Continue to modernize core instrumentation capability. Modernize two RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Replace aging Telemetry acquisition and processing equipment. Replace and upgrade obsolescent image generators and video display systems at the Manned Flight Simulator facility. Develop full-spectrum dynamic avionics and aircraft signature measurement system. Procure Common Avionics Instrumentation System (CAIS) hardware suites. Provide fiber-optic connectivity between multiple sites and range facilities. Correct deficiency in tactical electronic warfare simulators. Develop and install radio frequency to fiber optic interface system.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	34,164	17,281	48,482
(U) Appropriated Value:	36,236	21,281	
(U) Adjustments from Pres Budget:	-600	+3,951	-5,861
(U) FY 2000 Pres Budget Submit:	33,564	21,232	42,621

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 reflects decreases of \$545 thousand for the Small Business Innovative Research (SBIR) assessment and, \$55 thousand for minor programmatic adjustments. FY 1999 reflects an increase of \$4,000 thousand for the East Coast Communications network, (executed under project unit W2447) and a decrease of \$49 thousand for Congressional undistributed reductions. FY 2000 reflects decreases of \$250 thousand for the Air Transport Study, \$928 thousand for Target 21 initiatives, \$412 thousand for other Navy priorities, and \$444 thousand for pricing adjustments. In addition, the following funds were realigned from this project to the following program elements and projects: \$1,927 thousand to P.E. 0605864N, project W0654 (MRTFB); \$1,400 thousand to P.E. 0605863N, project W0568 (R&D project flying); and \$500 thousand to P.E. 0605853N, project W2347 (T&E Modeling & simulation).

(U) Schedule: Not applicable

(U) Technical: Not applicable

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(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E

(U) P.E. 0605807F: Test and Evaluation (Air Force)

0605864N: Test and Evaluation (Navy)

(U) D. ACQUISITION STRATEGY: The overall program is designed to establish a synergism with investments that supports a corporate Navy goal of ensuring required Test and Evaluation capabilities are available for acquisition program test at the least possible cost. These projects enable Navy Test and Evaluation ranges to support test program milestone decisions as well as develop and field testing capabilities needed to support advanced technology acquisition programs.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N
Major T&E Investment

PROJECT NUMBER: W2195
PROJECT TITLE T&E Investment

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Instrumentation Component Replacement	WX	NAWCAD, Patuxent River, MD	4,174	1,146	10/98	1,000	10/99	CONT.	CONT.	
Instrumentation Component Replacement	WX	NAWCWD, Point Mugu, CA	6,857	1,500	10/98	1,500	10/99	CONT.	CONT.	
Dynamic Avionics Measurements	WX	NAWCAD, Patuxent River, MD	10,432	2,000	10/98				12,432	
Tracking Hydrophone Replacement	WX	AUTEC, Newport, RI	8,272	6,981	10/98	2,000	10/99		17,253	
Tracking Mounts	WX	NAWCWD, Point Mugu, CA	7,499	1,410	10/98	2,655	10/99	1,303	12,867	
Range Telemetry Systems	WX	NAWCWD, Point Mugu, CA	4,869	1,032		2,293	10/99	1,147	9,341	
Air surveillance Radar	WX	NAWCWD, Point Mugu, CA	260	1,200		1,556	10/99		3,016	
Slep FPS-16	WX	NAWCWD, Point Mugu, CA				3,000	10/99	8,350	11,350	
Radar Sys Improvements	WX	AUTEC, Newport, RI				1,700	10/99	2,900	4,600	
CATS-Radars	WX	NAWCAD, Patuxent River, MD				1,000	10/99	2,700	3,700	
Test Monitoring and Processing	WX	NAWCAD, Patuxent River, MD				1,700	10/99	6,300	8,000	
Target Control System	WX	NAWCWD, Point Mugu, CA				2,000	10/99	3,000	5,000	
Off-Board Advanced Sys Stimulator	WX	AUTEC, Newport, RI				2,300	10/99	12,800	15,100	
Manned Flight Stimulator Upgrades	WX	NAWCAD, Patuxent River, MD				1,000	10/99	5,500	6,500	
MRTFB Surveillance	WX	NAWCWD, Point Mugu, CA				2,600	10/99	6,000	8,600	
Dynamic Multi-spectral Avionics Measure	WX	NAWCAD, Patuxent River, MD				1,900	10/99	7,500	9,400	
Underwater Range Data Communication	WX	AUTEC, Newport, RI				600	10/99	5,179	5,779	
CAIS Equipment	WX	NAWCAD, Patuxent River, MD				3,000	10/99	5,500	8,500	
Cable Plant Phase II	WX	NAWCWD, Point Mugu, CA				1,500	10/99	5,500	7,000	

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Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Fiber Optic Network Connectivity	WX	NAWCAD, Patuxent River, MD				800	10/99	1,000	1,800	
ATEWES Generator Upgrade	WX	NAWCAD, Patuxent River, MD				1,500	10/99	575	2,075	
ARDS Receiver Upgrade	WX	NAWCWD, Point Mugu, CA				3,400	10/99	2,900	6,300	
RF to Fiber Transmission Interface	WX	NAWCAD, Patuxent River, MD				1,200	10/99	1,200	2,400	
Remote TM Stations	WX	NAWCWD, Point Mugu, CA			10/98	992	10/99	3,805	4,797	
Investment Items Less Than \$1M	WX	Various	294,631	1,902	10/98	1,425	10/99	CONT.	CONT.	
East Coast Communications	WX	NAWCAD, Patuxent River, MD		3,892	1/99					
Subtotal Product Development			336,994	21,063		42,621		83,159	165,810	
Remarks										
Subtotal Support: Not applicable			0	0		0		0	0	
Remarks										
Subtotal T&E: Not applicable			0	0		0		0	0	
Remarks										
Subtotal Management:			0	0		0		0	0	
SBIR Assessment				169					70	
Remarks										
Total Cost			336,994	21,232		42,621		83,159	165,880	

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